

## Voltage Detector with Delay Function (Internal Counter Type)

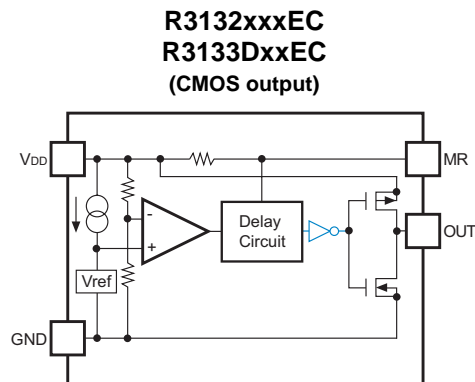
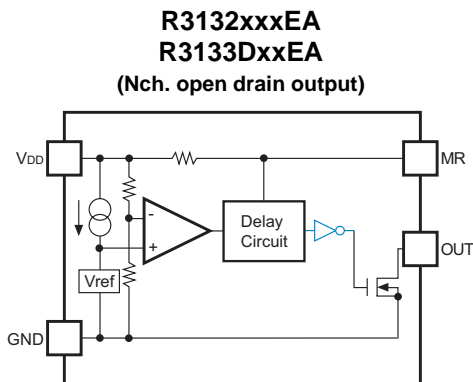
The R3132x/R3133D Series are CMOS-based voltage detector ICs with the built-in output delay circuit. There is no hysteresis between the detector threshold and the released voltage. By inputting "L" signal to MR pin, the manual reset signal is outputted. Reset signal can be chosen from "L" (R3132x) or "H" (R3133D). A delay capacitor is not needed, because the output delay time of 240ms is generated with the counter in the IC.

### FEATURES

- Supply Current ( $I_{SS}$ )..... Typ. 0.8 $\mu$ A ( $V_{DD}=V_{DET}+1.0V$ , R313xx15Ex)
- Operating Voltage Range ( $V_{DD}$ )..... 0.75V to 6.0V (R3132x, Absolute maximum rating: 6.5V), 0.8V to 6.0V (R3133D, Absolute maximum rating: 6.5V)
- Detector Threshold Range ( $V_{DET}$ )... 1.0V to 5.0V \*(Internally fixed)
- Output Delay ..... Typ. 240ms (Accuracy  $\pm 15\%$ )
- Reset Signal ..... R3132x : "L", R3133D : "H"
- Detector Threshold Accuracy.....  $\pm 2\%$
- Temp. coeff. of Detector Threshold .. Typ.  $\pm 100\text{ppm}/^\circ\text{C}$
- Two Output Types ..... Nch. Open Drain and CMOS
- Packages ..... SON1612-6, SC-82AB (only R3132Q)

\*) For detail, please refer to the below SELECTION GUIDES.

### BLOCK DIAGRAMS



Blue line: only R3133D

### SELECTION GUIDES

Halogen Free	Package	Q'ty per Reel	Part No.
H/F	SON1612-6	4,000 pcs	R3132DxxE*(y)-TR-FE R3133DxxE*(y)-TR-FE
H/F	SC-82AB	3,000 pcs	R3132QxxE*(y)-TR-FE

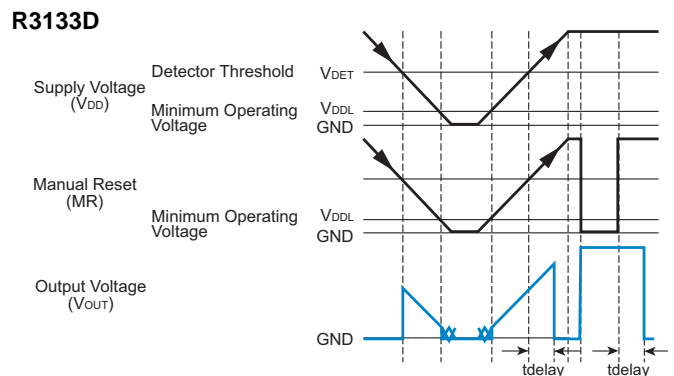
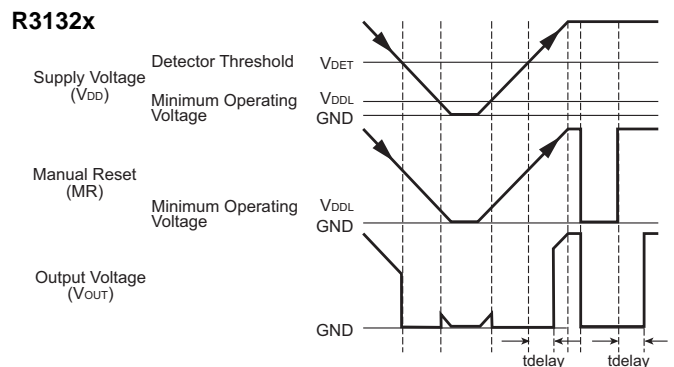
- xx : Specify the detector threshold within the range of 1.0V (10) to 5.0V (50) in 0.1V steps. (2.32V, 2.63V, 2.93V, 3.08V, 4.38V and 4.63V can also be specified.)
- y : If the detector threshold includes the 3rd digit, indicate the digit of 0.01V. (Example) If the detector threshold is 2.63V, R313xx26E\*3-TR-FE
- \* : Select the output type from (A) Nch. open drain or (C) CMOS.

### PACKAGES (Top View)

SON1612-6		SC-82AB	
1	$V_{DD}$	1	GND
2	GND	2	OUT
3	MR*	3	MR*
4	OUT	4	$V_{DD}$
5	GND		
6	NC		

\*) Manual reset input pin ("L" active)

### TIMING CHARTS



The detector threshold is the same as the released voltage, not hysteresis.

### APPLICATIONS

- Microcontroller and logic circuit reset
- Battery checker
- Window comparator
- Wave shaping circuit
- Battery back-up circuit
- Power failure detector



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